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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 7923 (1985): Glossary of terms and definitions relating to drives using V-belts and grooved pulleys [PGD 31: Bolts, Nuts and Fasteners Accessories]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Pulleys and Belts Sectional Committee, EDC 42; V-Belts and Their Corresponding Pulleys Subcommittee, EDC 42 : 5 [Ref : Doc : EDC 42 (4113)]



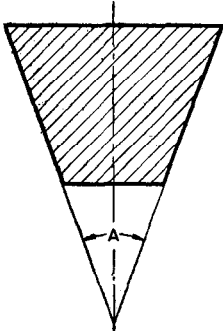
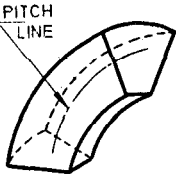
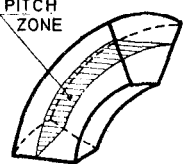
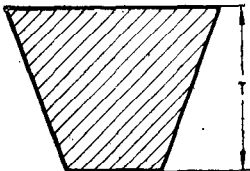
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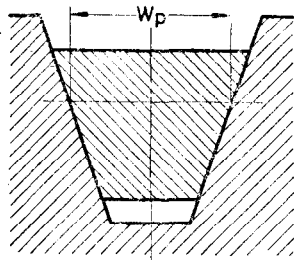
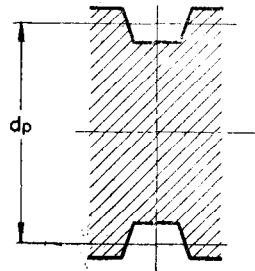
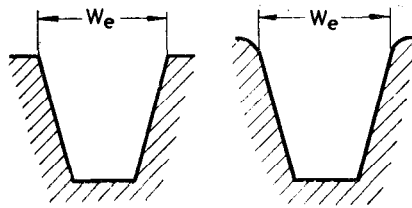
GLOSSARY OF TERMS AND DEFINITIONS
RELATING TO DRIVES USING V-BELTS
AND GROOVED PULLEYS

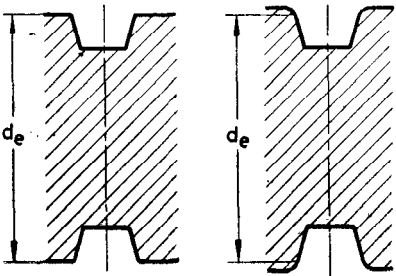
(First Revision)

1. Scope — Lays down the terms and definitions relating to drives using V-belts and grooved pulleys.
2. Terminology

Term	Symbol	Definition	Figure
2.1 General Definition			
2.1.1 V-belt-drive	—	A drive which consists of one or more V-belts mounted on grooved pulleys. The profiles of the belts and of the pulley grooves are such that the belts come into contact only with the sides of the pulley grooves and not with the base of the grooves.	
2.1.2 Speed ratio of V-belt drive	—	The ratio of angular velocities of the pulleys R , as calculated from the ratio of the pitch diameters (d_p) of the pulleys and making no allowance for the slip and creep.	
2.2 Definitions relating to V-belts			
2.2.1 V-belt	—	<p>A belt, the cross-section of which is shaped roughly like a trapezium. The latter is usually isosceles.</p> <p>On a cross-section of a straight belt, the trapezium is outlined by the base, sides and top of the belt.</p> <p>The intersection of the extended profiles of the base, side and top is considered when the edges are cut short or rounded.</p> <p>Note — There are also belts of cross section in the shape of non-isosceles trapeziums. In an extreme case, the base comes to a point and this gives a triangular belt.</p>	

Term	Symbol	Definition	Figure
2.2.2 Angle of a V-belt	A	The included angle obtained by extending the sides of the belt.	
2.2.3 Pitch line of a V-belt	—	Any circumferential line in the belt which keeps the same length when the belt is bent perpendicularly to its base.	
2.2.4 Pitch zone of a V-belt	—	Geometric zone containing all of the pitch lines.	
2.2.5 Top width of a V-belt	—	Top width of the trapezium outlined on a cross-section.	
2.2.6 Pitch width of a V-belt	W_p	The width of the belt at its pitch zone. The width remains unchanged when the belt is bent perpendicularly to its base.	
2.2.7 Effective length of a V-belt	—	The length of a line circumscribing a V-belt at the level of the effective diameter of the measuring pulleys whilst the V-belt is at a prescribed tension.	
2.2.8 Pitch length of a V-belt	L_p	The length of the pitch line of a belt.	
2.2.9 Inside length of a V-belt	L_i	The approximate circular length measured along the inside of the belt when the latter is in a normal untensioned condition.	
2.2.10 Outside length of a V-belt	L_o	The approximate circular length measured along the outside of the belt when the latter is in a normal untensioned condition.	
2.2.11 Nominal height of a V-belt	T	Height of the trapezium outlined on a cross-section.	

Term	Symbol	Definition	Figure
2.2.12 <i>Relative height of a V-belt</i>	$\frac{T}{W_p}$	The ratio of the nominal height of the belt to its pitch width.	
2.3 <i>Definitions relating to grooved pulleys</i>			
2.3.1 <i>V-grooved pulleys</i>	—	A pulley with one or more grooves (which, in most cases, have an identical profile in the shape of a truncated or non-truncated symmetrical V) obtained by rotation of this profile around the pulley axis.	
2.3.2 <i>Pitch width of a pulley groove</i>	W_p	That width of the pulley groove which has the same dimensions as the pitch width of the belt used with this pulley.	
2.3.3 <i>Pitch diameter of a grooved pulley</i>	d_p	The diameter of the pulley measured at the level where the width of the groove is equal to the pitch width of the corresponding belt.	
2.3.4 <i>Pitch circumference of a pulley groove</i>	C_p	The circumference of a circle with a diameter equal to the pitch diameter.	
2.4 <i>Definitions relating to effective system</i>			
2.4.1 <i>Effective groove width of a V-belt pulley</i>	W_e	A specified groove width on which the geometric fit of a V-belt on a drive is based. It is usually located at the outermost extremities of the straight side walls of the groove and for all belt measuring pulleys and for most machined type pulleys, it coincides with the actual top width of the groove within reasonable tolerances. It is a defined value not subject to tolerance.	

Term	Symbol	Definition	Figure
2.4.2 Effective diameter of a V-belt pulley	d_e	The pulley diameter at which the groove width is equal to the effective groove width.	
2.4.3 Effective line differential of a grooved pulley	—	The radial displacement between the level of the pitch width and the effective width.	
2.4.4 Effective circumference of a V-belt pulley	C_e	The circumference of a circle with a diameter equal to the effective diameter.	
2.4.5 Effective length of a V-belt	L_e	The length of the shortest line circumventing a V-belt drive at the effective diameter of the pulleys while the V-belt is at a prescribed tension. The recommended method for measuring the effective length of a V-belt includes the use of a measuring fixture having two pulleys of the same effective diameter. (The outside diameter on a measuring pulley is the same as the effective diameter). The effective length can be obtained by adding the effective circumference of one pulley to twice the measured centre distance when the V-belt tension is at the prescribed value.	

EXPLANATORY NOTE

This standard was originally published in 1975. First revision has been brought out in the light of technical practices followed in the country and definitions in 2.1.2, 2.2.5, 2.2.7 and 2.4.3 have been added.

In the preparation of this standard considerable assistance has been derived from ISO 1081-1980 'Drives using V belts and grooved pulleys — Terminology', issued by the International Organization for Standardization (ISO).